

Big Grazing

Aspen Report

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2/15/2011

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Introduction

The aesthetic and habitat importance of the aspen forest cover type on the Bighorn National Forest is disproportionate to the relatively small area it occupies on the Forest. Activities such as browsing by livestock and wildlife, and suppression of naturally occurring wildfire, are suspected to be influencing aspen stands on the Bighorn. The purpose of this report is to disclose how the actions included in this decision will affect the aspen stands in the project area.

This analysis is tiered to, and incorporates by reference, the Bighorn Terrestrial Ecosystem Assessment (Regan, et al., 2004), and the analyses considered in the Bighorn Revised Forest Plan Final Environmental Impact Statement (USDA Forest Service, 2005).

Overview of Issues Addressed

There is a concern that livestock grazing has impacted some aspen stands within the project areas by inhibiting aspen regeneration. There is a concern that livestock grazing reduces the amount of available fuels with reduces the opportunity for stand replacing fire. Stand replacing wildfire is important to aspen stand development, and aspen stands provide habitat for aspen-dependent species. (FP FEIS 3-113, 2008 updated R2 sensitive species list). The Forest Plan FEIS state there is a lack of aspen across the forest (FP FEIS 3-63, 3-113). In aspen stands, grazing (wildlife and livestock) affects the understory and can limit regeneration (FP FEIS 3-148).

Potential aspen monitoring items in the Forest Plan includes ‘summarize acres of aspen treated’. (Forest Plan Monitoring item 11, chapter 4, pages 4-15, 4-16) That will be the indicator used in this analysis to summarize the differences between the alternatives.

Affected Environment

The Forest Plan “Aspen White Paper”, included in the project record, describes the current condition, the affected environment, and management implications for aspen on the Bighorn National Forest. A brief summary follows.

Existing Condition

Aspen forests cover about 1% of the Bighorn National Forest in stands that range from a few trees to less than 30 acres. Aspen’s importance for wildlife habitat, biodiversity and aesthetics is disproportionately large compared to the small amount of land it occurs on. Browsing by wildlife and domestic livestock, potential short-term and long-term climate changes, and interruption of the historic fire regime are the primary suspects in the apparent loss of vigor and amount of aspen existing on the Bighorn National Forest. The existing stands are generally characterized by stems between 5 to 12 inches in diameter, although there are many stands of smaller size classes.

There is a small scale map of aspen stands in the Aspen White Paper. The Forest’s GIS vegetation database includes spatial locations of aspen stands, with the following limitations:

- The general rule for vegetation mapping for the Bighorn Common Vegetation Unit was to delineate, and attribute, vegetation polygons down to five acres. An exception was made for aspen, which was delineated in vegetation polygons as small as two acres.
- Within larger polygons, aspen (and other vegetation) could be attributed if the total crown cover exceeded about 10% in cover in the polygon. This attributing was not spatially

explicit within the polygon. It was used when a species was diffuse throughout a polygon, or if the species occurred in a discrete location, it was less than two acres.

Because a large percentage of the aspen on the Bighorn is not mapped, because of the cited limitations, additional mapping work was not conducted for this analysis.

Recent management strategies for managing aspen is based upon, and include, the following:

- The Forest has had terrestrial ecologists Dale Bartos and Dennis Knight visit the Forest to discuss, among other things, aspen condition and management.
- Until about 5 to 8 years ago, the Forest was clearfelling aspen clones for regeneration. In some cases, those areas were fenced to preclude livestock and/or elk browsing. Regeneration success varied from complete failures to thousands of sprouts per acre.
- In the past 5 to 8 years, based upon discussions with Bartos and Knight, the Forest began to simply remove encroaching conifers from within and near the clones, without clearfelling the aspen stems.

Forest Plan Biodiversity guidelines for aspen (Forest Plan page 1-27) include:

1. Analyze aspen's spatial and structural occurrence in the landscape during project design. In landscapes with multiple aspen clones, manage aspen for a mix of structural stages.

Aspen spatial occurrence was considered in reviewing the map in the aspen white paper. Structural occurrence is qualitatively discussed in the white paper report. In the Beaver Creek area, the prescribed fire and mechanical aspen treatments will provide for a mix of structural stages, and implementation of the forest-wide aspen regeneration decision will provide for that structural stage mix across the remainder of the forest.

2Manage aspen stands for retention.

In the Beaver Creek area, the prescribed fire and mechanical aspen treatments will provide for retention, and implementation of the forest-wide aspen regeneration decision will provide for retention across the remainder of the forest.

3When aspen regeneration is considered, set priorities for treatment within seral aspen clones using the following criteria:

- a. Stands with large standing and down dead basal area (20 percent dead) that are single-storied and showing signs of animal barking or disease.
- b. Conifer stands that contain a small minority of live aspen basal area.
- c. Stands in heavy animal use areas, isolated clones, those at low elevations, or in riparian areas.

d. Stands which are cost-efficient to treat and benefit aspen's distribution.

Criteria a and d are currently, and are expected to continue to be, the primary selective treatment criteria.

Forest Plan Rangeland Vegetation guidelines for aspen (Forest Plan page 1-33) include:

Manage livestock grazing in riparian and aspen areas using the following interrelated practices implemented as a complete package where feasible:

- a. Apply short duration grazing, as feasible (generally less than 20 days), to provide greater opportunity for re-growth and to avoid utilization of woody species.**
 - a.** Some allotments have enough pastures to allow for this, while many do not. Aspen utilization guidelines, and ocular monitoring (which gets converted to photo or quantitative plot monitoring if necessary) provide for sufficient protection of aspen stands. Similarly, the stubble height use guidelines, and riparian benchmark monitoring, will provide for achievement of the desired conditions in riparian areas. In addition, this concern is less important after the growing season, which on much of the Forest is in early August.
- b. Keep stock tanks, salt supplements, livestock handling facilities, and similar features out of the water influence zone and aspen stands.**
 - a.** The design criteria for alt. 3 includes: "Use salt or supplement to draw livestock toward or away from specific areas." This includes the concept of not putting salt or supplements in aspen stands. This is implemented through the AOIs when salt location direction is agreed to by FS and permittee. In addition, none of the stock tanks existing or proposed, are within aspen stands.
- c. Keep stock driveways out of the water influence zone except to cross at designated points. Harden water gaps and designated stock crossings where needed and feasible.** At locations where this has been identified as an issue, crossing is done at designated points. Up "the W" this is not feasible due to topography (Sunlight Mesa and Red Canyon C&H). ID team decided no hardening has been identified as needed.
- d. Adjust management in riparian areas and wetlands to remedy detrimental soil compaction wherever it occurs.** This occurs by implementing use guidelines, rotational grazing strategies, and range readiness. Monitoring has not identified this as a long term, large scale, problem. We are well under the 15% BMP for detrimentally impacted soils. Long-term benchmark monitoring will measure if we are achieving this guideline or not.
- e. Design grazing systems to limit utilization of woody species. Move livestock from riparian and aspen areas when livestock begin to have a preference for woody species, especially species in the young maturity classes.**
 - a.** In general, the guidelines for upland and riparian utilization, if met, provide for sufficient aspen protection, since if those guidelines are met, livestock browsing

on aspen will be minimal. To verify this, routine Bighorn practice is to occularly or through the use of photo points monitor aspen clone browsing. To date, the monitoring has not indicated excessive aspen browsing by livestock, at least to the degree that would necessitate additional management action.

- b. Examples of this monitoring and subsequent additional management action within the Little Horn and Beaver Creek Project include a few aspen stands being monitored through established photo points. Monitoring is designed to detect expansions in stand size on the edges of stands, and/or increases in height of younger shoots or trees. Once trees reach about 6 feet in height, the terminal leaders are out of reach of browsing ungulates, both wildlife and domestic livestock. One stand on the Sunlight Mesa C&H allotment has an electric fence enclosure that was constructed about 2003 to keep cattle out, but wildlife still have access. There are another 3 stands within the Little Horn project area that have permanent photo-points.

Desired Condition

The Forest Plan strategy for aspen is: “Manage to retain or increase aspen by treating 500 acres over 10 years. Treatments include commercial and non-commercial harvests to remove competing conifer and regenerate aspen; prescribed fire; and, fencing, where needed.” The desired condition for the aspen in the analysis area is to retain or increase the total amount of this cover type.

Environmental Consequences

Methodology

The environmental consequences shown below were qualitatively estimated by Bernie Bornong, who has managed and observed the forests on the Bighorn since 1979. I worked on the Bighorn as a certified silviculturist, and served, unofficially, as the forest ecologist, during the 1990’s. This work included reviewing the applicable literature, field tours on forest with Dr. Dennis Knight, working on the Bighorn Terrestrial Ecosystem Assessment, and overseeing the Common Vegetation Unit GIS database development.

Incomplete and Unavailable Information

As listed above, not every aspen clone on the Forest is mapped in the GIS database. This is not considered important because managers understand the distribution, and district crews who are familiar with specific landscapes and stands can treat aspen stands where they occur.

Spatial and Temporal Context for Effects Analysis

Discuss effects timeframes (short term vs. long term) for direct, indirect and cumulative effects and provide rationale for analysis areas that are relevant to your discussion. Describe sources of information used to support your analysis.

The following table shows the acres of aspen within each analysis area, and aspen acres within prescribed burn units included in this decision. The acres were compiled by project GIS analyst.

Beaver Creek		Little Horn		Goose	Rock	Tensleep
Aspen Acres	Aspen acres in burn units	Aspen Acres	Aspen acres in burn units	Aspen Acres	Aspen Acres	Aspen Acres
224	45	1007	426	310	1338	688

Connected Actions, Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

The Forest wide past, present, and reasonably foreseeable actions table in Chapter 2 of the EIS was reviewed, and the following projects are the ones that most directly add to this actions aspen work:

- The forestwide aspen regeneration and meadow conifer encroachment decision. This project will add to the number of acres of aspen treated and regenerated.
- Various prescribed burn decisions listed in the table. There is an unquantified amount aspen clones within prescribed burn units. Because all the aspen clones are not mapped in the Bighorn GIS databases, and because it is unknown ahead of time the amount of aspen that will receive sufficient intensity of fire in order to induce regeneration, this effect will not be quantified.
- Wildfires will occur in the future with varying intensity and scale. An unquantified amount of aspen clones will be burned with sufficient intensity to induce aspen regeneration.

Alternatives 1 and 2

Direct Effects and Indirect Effects

Additional aspen treatments, other than those already authorized under other decisions such as the aspen/meadow encroachment decision, will not occur.

Cumulative Effects

Up to 1000 acres of aspen will be treated annually under the forest-wide aspen/meadow encroachment decision. Aspen stands will occasionally be burned in wildfires and in prescribed fires.

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

These alternatives minimally meet Forest Plan direction for aspen, because of the other present and reasonably foreseeable actions (prescribed fire, wildfire and aspen/meadow project). However, since less aspen will be treated and regenerated

than under alternative 3, these alternatives do not meet Forest Plan objectives as well as alternative 3.

Other Relevant Mandatory Disclosures

There is nothing applicable under this heading under this decision.

Alternative 3

Direct Effects and Indirect Effects

45 acres of aspen in the Beaver Creek area and 426 acres within the Little Horn area will be regenerated within the burn units included in this decision.

Cumulative Effects

Up to 1000 acres of aspen will be treated annually under the forest-wide aspen/meadow encroachment decision. Aspen stands will occasionally be burned in wildfires and prescribed fire.

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

Because of the additional aspen treatments included in this decision, this alternative best meets Forest Plan objectives for aspen retention.

Other Relevant Mandatory Disclosures

There is nothing applicable under this heading under this decision.

Monitoring Recommendations

A continuation of the current aspen monitoring program is recommended. Occular monitoring of aspen regeneration and utilization occurs across the forest. Where aspen utilization has been identified as a potential issue, photo-point or quantitative monitoring will be established. An example of this monitoring on the Little Horn cattle and horse allotment is included in the project record.

References

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